

EXHIBIT 3

IEEE Std 100-1996

Introduction

Since the first edition in 1941 of the American Standard Definitions of Electrical Terms, the work now known as IEEE Std 100, The IEEE Standard Dictionary of Electrical and Electronics Terms, has evolved into the unique compendium of terms that it is today.

The current edition includes all terms defined in approved IEEE standards through December 1996. Terms are categorized by their technical subject area. They are also associated with the standards or publications in which they currently appear. In some cases, terms from withdrawn standards are included when no current source can be found. Earlier editions of IEEE Std 100 included terms from sources other than IEEE standards, such as technical journals, books, or conference proceedings. These terms have been maintained for the back of the book.

The practice of defining terms varies from standard to standard. Many working groups prefer to work with existing definitions, while others choose to write their own. Some terms may have several similar, although not identical, definitions. Definitions have been combined where it has been possible to do so by making only minor changes. Otherwise, they have been written as such in the original standard.

Users of IEEE Std 100 occasionally comment on the surprising omission of a particular term commonly used in an area. In response to this, working groups obtain authorization to create a glossary of terms used in their field. All existing approved standard glossaries have been incorporated into this edition of IEEE Std 100, including the most recent glossaries of terms for computers and power engineering.

IEEE working groups are encouraged to refer to IEEE Std 100 when developing new approved standards. This standard is one of a number of information technology dictionaries being developed by standards organizations accredited by the American National Standards Institute. This dictionary was developed under the sponsorship of voluntary standards organizations, using a consensus-based process.

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Introduction

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The practice of defining terms varies from standard to standard. Many working groups that write standards prefer to work with existing definitions, while others choose to write their own. Thus terms may have several similar, although not identical, definitions. Definitions have been combined wherever it has been possible to do so by making only minor editorial changes. Otherwise, they have been left as written in the original standard.

Users of IEEE Std 100 occasionally comment on the surprising omission of a particular term commonly used in an electrical or electronics field. This occurs because the terms in IEEE Std 100 represent only those defined in the existing or past body of IEEE standards. To respond to this, some working groups obtain authorization to create a glossary of terms used in their field. All existing, approved standard glossaries have been incorporated into this edition of IEEE Std 100, including the most current glossaries of terms for computers and power engineering.

IEEE working groups are encouraged to refer to IEEE Std 100 when developing new or revised standards to avoid redundancy. They are also encouraged to investigate deficiencies in standard terms and create standard glossaries to alleviate them.

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How to use this dictionary

The terms defined in this dictionary are listed in *letter-by-letter* alphabetical order. Spaces are ignored in this style of alphabetization, so *cable value* will come before *cab signal*. Descriptive categories associated with the term in earlier editions of IEEE Std 100 will follow the term in parentheses. New categories appear after the definitions (see Categories, below), followed by the designation of the standard or standards that include the definition. If a standard designation is followed by the letter s, it means that edition of the standard was superseded by a newer revision and the term was not included in the revision. If a designation is followed by the letter w, it means that edition of the standard was withdrawn and not replaced by a revision. A bracketed number refers to the non-IEEE standard sources given in the back of the book.

Acronyms and abbreviations are no longer listed in a separate section in the dictionary; rather, they are incorporated alphabetically with other terms. Each acronym or abbreviation refers to its expanded term, where it is defined. Acronyms and abbreviations for which no definition was included in past editions have been deleted from this edition of IEEE Std 100.

Abstracts of the current set of approved IEEE standards are provided in the back of the book. It should be noted that updated information about IEEE standards can be obtained at any time from the IEEE Standards World Wide Web site at <http://standards.ieee.org/>.

Categories

The category abbreviations that are used in this edition of IEEE Std 100 are defined below. This information is provided to help elucidate the context of the definition. Older terms for which no category could be found have had the category "Std100" assigned to them. Note that terms from sources other than IEEE standards, such as the National Electrical Code® (NEC®) or the National Fire Protection Association, may not be from the most recent editions; the reader is cautioned to check the latest editions of all sources for the most up-to-date terminology.

interconnected delta connection (power and distribution transformers) A three-phase connection using six windings (two per phase) connected in a six-sided circuit with six bushings to provide a fixed phase-shift between two three-phase circuits without change in voltage magnitude. *Note:* The interconnected delta connection is sometimes described as a "hexagon autotransformer," or a "squashed delta."

(PE) C57.12.80-1978r

interconnected star connection of polyphase circuits See: zig-zag connection of polyphase circuits.

interconnected system (A) (electric power system) A system consisting of two or more individual power systems normally operating with connecting tie lines. *See also:* power system.

(B) Two or more power systems connected by transmission facilities. (PE) 94-1991

interconnecting channel (of a supervisory system) The transmission link, such as the direct wire, carrier, or microwave channel (including the direct current, tones, etc.) by which supervisory control or indication signals or selected telemeter readings are transmitted between the master station and the remote station or stations, in a single supervisory system.

(PE/SWG) C37.100-1992

interconnection (1) The physical plant and equipment required to facilitate the transfer of electric energy between two or more entities. It can consist of a substation and an associated transmission line and communications facilities or only a simple electric power feeder. (PE/SUB) 1109-1990

(2) The facilities that connect two power systems or control areas. (PE) 1858-1993

interconnection device *See:* adapter.

interconnection diagram (packaging machinery) A diagram showing the connections between the terminals in the control panel and outside points, such as connections to motors and auxiliary devices. (IA) 333-1980w

interconnection tie A feeder interconnecting two electric supply systems. *Note:* The normal flow of energy in such a feeder may be in either direction. *See also:* center of distribution.

(PE/T&D) [10]

interconnect space The address space used for board identification, system configuration, and board specific functions such as testing and diagnostics. (C/MM) 1296-1987s

interconnect template A definition of the contents of the interconnect space of an agent. (C/MM) 1296-1987s

interdendritic corrosion Corrosive attack that progresses preferentially along interdendritic paths. *Note:* This type of attack results from local differences in composition, that is, coring, commonly encountered in alloy castings. (IA) [59]

interdigital magnetron A magnetron having axial anode segments around the cathode, alternate segments being connected together at one end, remaining segments connected together at the opposite end.

(ED) [45], 161-1971w

interdigital transducer (IDT) A comb-like conductive structure that is fabricated on the surface of a substrate and consists

of interleaved metal electrodes (fingers) whose function is to transform electrical energy into acoustic energy or vice versa by means of the piezoelectric effect. (UFFC) 1037-1992

interdigit interval (dial-pulse address signaling systems) (telephony) In dial-pulse signaling, an extended make interval used to separate and distinguish successive dial-pulse address digits. (COM) 753-1983w

interdigit (interdigital) time (measuring the performance of tone address signaling systems) The time interval between successive signal present intervals during which no signal present condition exists. This time includes the signal off condition and transition intervals between signal off condition and signal present condition on both state transitions.

(COM) 752-1986r

interelectrode capacitance (j - I interelectrode capacitance C_{ji} of an n -terminal electrode tube) The capacitance determined from the short-circuit transfer admittance between the j th and the i th terminals. *Note:* This quantity is often referred to as direct interelectrode capacitance. *See also:* electron-tube admittances. (ED) 161-1971w

interelectrode transadmittance (j - I interelectrode transadmittance of an n -electrode electron tube) The short-circuit transfer admittance from the j th electrode to the i th electrode. *See also:* electron-tube admittances. (ED) 161-1971w

interelectrode transconductance (j - I interelectrode transconductance) The real part of the j - I interelectrode transadmittance. *See also:* electron-tube admittances. (ED) 161-1971w

interelement influences (polyphase wattmeters) The percentage change in the recorded value that is caused solely by the action of the stray field of one element upon the other element. *Note:* This influence is determined at the specified frequency of calibration with rated current and rated voltage in phase on both elements or such lesser value of equal currents in both elements as gives end-scale deflection. Both current and voltage in one element shall then be reversed, and, for rating purposes, one-half the difference in the readings in percent is the interelement influence. *See also:* accuracy rating. (EEC) [102], [111]

interexchange carrier In the United States, a common carrier limited by law to carry telephone traffic between local exchange and transport areas. (C) 610.7-1995

interexchange channel A direct channel or circuit between exchanges. (C) 610.7-1995

interface (1) (696 interface devices) A shared electrical boundary between parts of a computer system, through which information is conveyed. (C/MM) 696-1983w

(2) (microprocessor operating systems) A shared boundary between two layers or modules of software. (C/MM) 855-1985s

(3) (watt-hour meters) The means for transmitting information between the register and peripheral equipment. (ELM) C12.13-1985s

(4) (general) A shared boundary. (C) [20], [85]

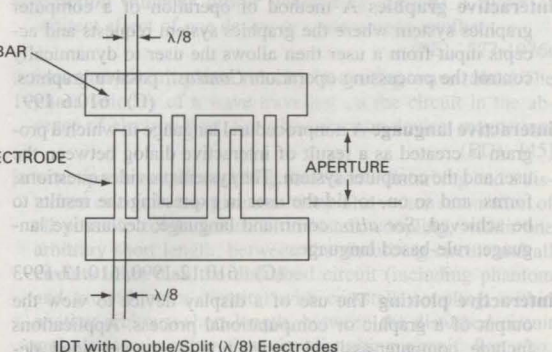
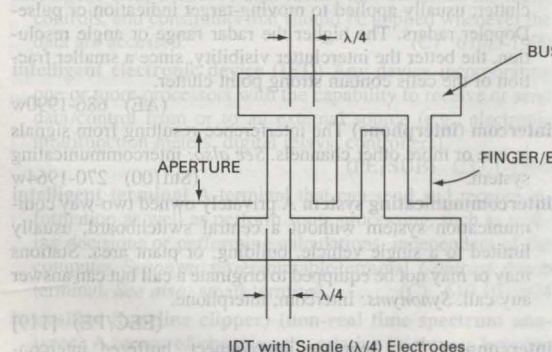


illustration of transducer parameters

(5) **(Class 1E equipment and circuits) (nuclear power generating station)** A junction or junctions between a Class 1E equipment and another equipment or device. (Examples: connection boxes, splices, terminal boards, electrical connections, grommets, gaskets, cables, conduits, enclosures, etc.) (PE) 323-1974s, 380-1975w

(6) **(programmable instrumentation)** A common boundary between a considered system and another system, or between parts of a system, through which information is conveyed. (IM) 488.1-1987r

(7) **(test, measurement, and diagnostic equipment)** A shared boundary involving the specification of the interconnection between two equipments or systems. The specification includes the type, quantity and function of the interconnection circuits and the type and form of signals to be interchanged via those circuits. *See also:* adapter. (MIL) [2]

(8) **(A) (data transmission)** A common boundary; for example, a physical connection between two systems or two devices. The boundary may be mechanical such as the physical surfaces and spacings in mating parts, modules, components, or subsystems, or electrical, such as matching signal levels, impedances, or power levels of two or more subsystems. **(B) (data transmission)** A concept involving the specification of the interconnection between two equipments or systems. The specification includes the type, quantity, and function of the interconnection circuits and the type and form of signals to be interchanged by these circuits. (PE) 599-1985w

(9) **(A) (software)** A shared boundary across which information is passed. **(B) (software)** A hardware or software component that connects two or more other components for the purpose of passing information from one to the other. **(C) (software)** To connect two or more components for the purpose of passing information from one to the other. **(D) (software)** To serve as a connecting or connected component as in definition (B). (C) 610.12-1990

(10) **(STEBus)** A shared boundary between two or more systems, or between two or more elements within a system, through which information is conveyed. (C/MM) 1000-1987r, 796-1983r

(11) **(SBX bus)** A shared boundary, between two systems or parts of systems, through which information is transferred. (C/MM) 959-1988r

(12) **(electromechanical watt-hour meters)** The means for communications between devices. (ELM) C12.15-1990

(13) A device placed between the line output of a digital telephone set and test equipment. The device performs at least one of the following functions: simulation of a normal network connection, control of the telephone set under test, or access for the reference codec to the digital voice signal. (COM) 269-1992

(14) **(MULTIBUS)** A shared boundary between modules or agents of a computer system, through which information is conveyed. (C/MM) 1296-1987s

(15) A junction or junctions between a Class 1E equipment and another equipment or device. (For motors, typical interfaces include, as applicable: mechanical mounting connection to the driven equipment and the motor mounting to its base, and force transmitted to the motor, electrical connection, cooling system connections, and lubrication system connection. *See also:* data-transfer interface; user interface. (PE) 334-1994

(16) A shared boundary between two functional entities. A standard specifies the services in terms of the functional characteristics and behavior observed at the interface. The standard is a contract in the sense that it documents a mutual obligation between the service user and provider and assures a stable definition of that obligation. (C/PA) 14252-1996

(17) Hardware or software that provides a point of communication between two or more processes, persons, or other physical entities. (C) 610.10-1994, 610.7-1995

(18) A shared boundary between two objects such as devices, systems, or networks, across which information is passed. *See also:* data-transfer interface; user interface. (C/PE/SUB) 610.10-1994, 999-1992

(19) Either the MA interface or the MT interface without distinction, or one of the two in particular. (C/PA) 1224.1-1993

(20) A junction or junctions between a Class 1E equipment and another equipment or device. (For motors, typical interfaces include, as applicable: mechanical mounting connection to the driven equipment and the motor mounting to its base, any force transmitted to the motor, electrical connection, cooling system connections, and lubrication system connection.) (PE) 334-1994

(21) In software development, a relationship among two or more entities (such as software item - software item, software item - hardware item, software item - user, or software unit - software unit) in which the entities share, provide, or exchange data. An interface is not a software item, software unit, or other system component; it is a relationship among them. (C/SE) J-STD-016-1995

(22) A shared boundary between two layers or modules of software. (C/MM) 855-1990

interface-CCITT (data transmission) The present European, and possible world standard, for interface requirements between data processing terminal equipment and data communication equipment. The CCITT standard resembles very closely the American EIA, Standard RS-232-C. This standard is considered mandatory in Europe and on the other continents. (PE) 599-1985w

interface control (1) (software, configuration management) The process of identifying all functional and physical characteristics relevant to the interfacing of two or more configuration items provided by one or more organizations, and ensuring that proposed changes to these characteristics are evaluated and approved prior to implementation. *See also:* baseline; configuration audit; configuration control; configuration control board; configuration identification; configuration item; configuration management; configuration status accounting; software library. (C/SE) 610.12-1990, 828-1983s

(2) **(software)** (DoD usage) In configuration management, the administrative and technical procedures and documentation necessary to identify functional and physical characteristics between and within configuration items provided by different developers, and to resolve problems concerning the specified interfaces. *See also:* configuration control. (C) 610.12-1990

interface—EIA standard RS-232-C (data transmission) A standardized method adopted by the Electronic Industries Association to ensure uniformity of interface between data communication equipment and data processing terminal equipment. The standard interface has been generally accepted by a great majority of the manufacturers of data transmission and business equipment. (PE) 599-1985w

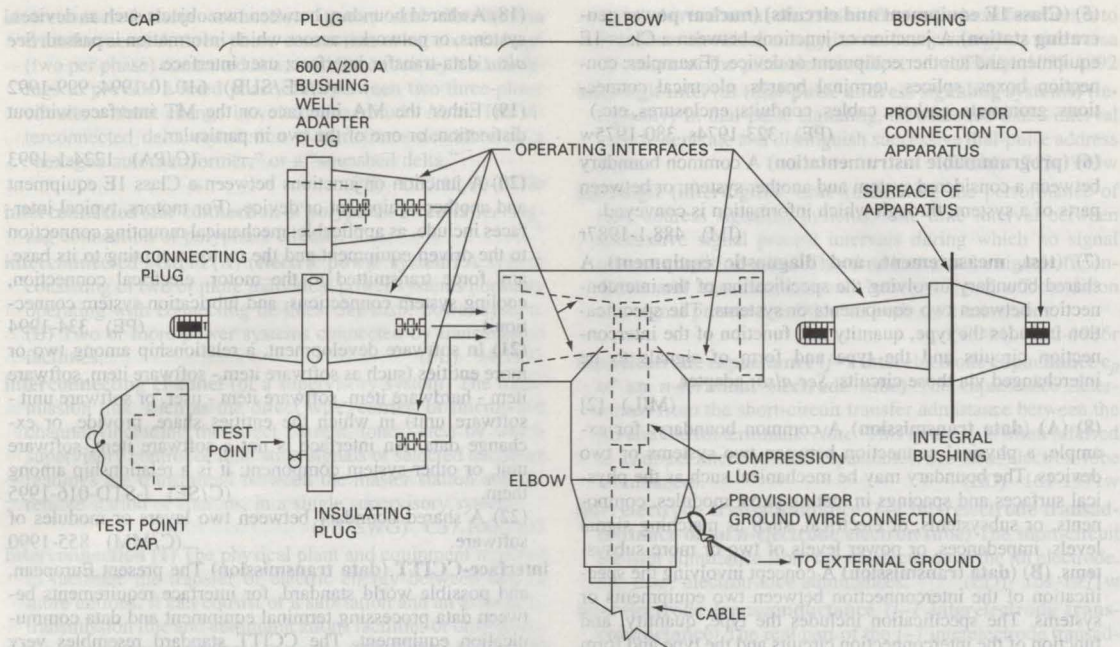
interface error An error condition caused by hardware incompatibility, software incompatibility or other incompatibilities between any two items of equipment. (C) 610.10-1994

interface—MIL STD 188B (data transmission) The standard method of interface established by the Department of Defense and is presently mandatory for use by the departments and agencies of the Department of Defense for the installation of all new equipment. This standard provides the interface requirements for interconnection between data communication security devices, data processing equipment, or other special military terminal devices. (PE) 599-1985w

interface, operating (connector) The surfaces at which a connector is normally separated. (See the corresponding figure.) 386-1977s

interface operation *See:* operation.

interface plane An assigned plane on the bottom surface of the module connector from which the connector's electrical pins



Typical components of 600 A separable insulated connector system

operating interface

protrude, thus forming the mating surface. This surface is used as a reference for module dimensions.

(BA/C) 1101.3-1993

interface requirement (software) A requirement that specifies an external item with which a system or system component must interact, or that sets forth constraints on formats, timing, or other factors caused by such an interaction. *Contrast:* design requirement; functional requirement; implementation requirement; performance requirement; physical requirement.

(C) 610.12-1990

interface specification (1) (software) A document that specifies the interface characteristics of an existing or planned system or component.

(C) 610.12-1990

(2) The description of essential functional, performance, and physical requirements and constraints at a common boundary between two or more system elements or between a system element and an operator (human interface).

(C/SE) 1220-1994

interface system (1) (696 interface devices) (general system term) The device independent functional, electrical, and mechanical elements of an interface necessary to effect unambiguous communication among a set of devices. Driver and receiver circuits, signal line descriptions, timing and control conventions, data transfer protocols, and functional logic circuits are typical system elements.

(C/MM) 696-1983w

(2) (general system) (microcomputer system bus) The device-dependent electrical and functional interface elements necessary for communication between devices. Typical elements are: driver and receiver circuits and functional logic circuits.

(C/MM) 796-1983r

(3) (STEBus) The device-independent electrical, mechanical, and functional interface elements required for unambiguous communication between two or more devices. Typical elements include

- driver and receiver circuitry
- signal line descriptions
- timing and control conventions
- communication protocols
- functional logic circuits.

(C/MM) 1000-1987r

(4) (programmable instrumentation) The device-independent mechanical, electrical, and functional elements of an interface necessary to effect communication among a set of devices. Cables, connector, driver and receiver circuits, signal line descriptions, timing and control conventions, and functional logic circuits are typical interface system elements.

(IM) 488.1-1987r

interface test A test to check interaction among equipment through permanent interconnections.

(PE/SUB) 1303-1994

interface test adapter (ITA) A device or series of devices designed to provide a compatible connection between the unit under test (UUT) and the test equipment. May include proper stimuli or loads not contained in the test equipment.

(ATL) 1232-1995

interface testing (software) Testing conducted to evaluate whether systems or components pass data and control correctly to one another. *See also:* component testing; integration testing; system testing; unit testing.

(C) 610.12-1990

interfacial connection (soldered connections) A conductor that connects conductive patterns on opposite sides of the base material.

(EEC) [105]

interference (1) (data transmission) In a signal transmission path, either extraneous power which tends to interfere with the reception of the desired signals or the disturbance of signal which results.

(PE) 599-1985w

(2) (electric-power-system measurements) Any spurious voltage or current appearing in the circuits of the instrument. *Note:* The source of each type of interference may be within the instrument case or external. The instrument design should be such that the effects of interference arising internally are negligible.

(EEC) [112]

(3) (induction or dielectric-heating usage) The disturbance of any electric circuit carrying intelligence caused by the transfer of energy from induction- or dielectric-heating equipment.

(IA) 169-1955w, 54-1955w

(4) (fiber optics) In optics, the interaction of two or more beams of coherent or partially coherent light. *See also:* coherent; degree of coherence; diffraction.

(Std100) 812-1984w